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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/539,015	03/30/2000	Thomas R. Winston	15225-00041	7690

7590 04/30/2003
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EXAMINER

SMITH, RUTH S

ART UNIT	PAPER NUMBER
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3737

DATE MAILED: 04/30/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/539,015

Applicant(s)

WINSTON ET AL.

Examiner

Ruth S Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

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Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 13, 2003 has been entered.

Drawings

The corrected or substitute drawings were received on October 15, 2002. These drawings are approved.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4,7-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Tearney et al. Tearney et al disclose a method and apparatus for guiding a guide wire (34) through body tissue including an interferometric guidance system (4) and circuitry (18) for generating Doppler shift information. Tearney et al further disclose an illumination source (2), first and second optical fibers (22,32) wrapped around piezoelectric transducers (90), a beam divider (6), a fixed reflector (12) and a detecting element (16). The apparatus of Tearney et al is capable of performing the function as set forth on lines 5-6 of claim 1.

Claims 14,18 are rejected under 35 U.S.C. 102(e) as being anticipated by Izatt et al. The claims are directly readable on Izatt et al which disclose performing Doppler shift analysis on signals generated by an interferometric system examining a sample including blood vessel to determine the velocity of blood.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5,6,12,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tearney et al in view of Peterson et al. Tearney et al disclose a method and apparatus for guiding a guide wire (34) through body tissue including an interferometric guidance system (4) and circuitry (18) for generating Doppler shift information. Tearney et al further disclose an illumination source (2), first and second optical fibers (22,32) wrapped around piezoelectric transducers (90), a beam divider (6), a fixed reflector (12) and a detecting element (16). Tearney et al fails to disclose the use of a frequency to voltage converter. Peterson et al disclose an apparatus for performing Doppler blood

flow studies wherein processing circuitry (590) includes a frequency to voltage converter (col. 9, lines 18-20). It would have been obvious to one of ordinary skill in the art to have modified the apparatus of Tearney et al such that it includes a frequency to voltage converter to facilitate computerized processing of frequency signals as is well known in the art.

Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izatt et al in view of Swanson et al. Izatt et al disclose performing Doppler shift analysis on signals generated by an interferometric system examining a sample including blood vessel to determine the velocity of blood. Swanson et al disclose a method for performing optical measurements including Doppler shift analysis and using either linear or sinusoidal changes in path length. It would have been obvious to one skilled in the art to have modified Izatt et al to include the Doppler shift analysis as taught by Swanson et al. Such a modification merely involves the substitution of one type of Doppler shift analysis of optical signals for another.

Response to Arguments

Applicant's arguments filed February 13, 2003 have been fully considered but they are not persuasive. It should be noted that claim 1 is directed to an apparatus and not a method as indicated on page 4 of applicant's remarks. The apparatus of Tearney et al is capable of performing the functions as set forth in claim 1. It should also be noted that such functions have not been positively set forth as part of a means plus function limitation. With regard to claims 5,6,12,13, one skilled in the art looking for a means to process optical signals would look at the Peterson et al reference in order to facilitate computerized processing of frequency signals as is well known in the art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Boppart et al disclose an optical measuring probe which performs

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Doppler shift analysis on signals generated by an interferometric system examining a sample including blood vessel to determine the velocity of blood.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth S Smith whose telephone number is (703) 308-3063. The examiner can normally be reached on M-F 5:30 AM- 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin Lateef can be reached on (703) 308-3256. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3590 for regular communications and (703) 308-0758 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0858.



Ruth S Smith
Primary Examiner
Art Unit 3737

RSS
April 28, 2003